Listing of the Claims:

1. (Original) A heater apparatus for heating fluid, the heater apparatus comprising:

a low porosity, thermally conductive mass;

heating means, thermally coupled to the thermally conductive mass, for imparting heat to the thermally conductive mass; and

a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, the fluid flow path open to the exterior of the thermally conductive mass.

2. (Original) The heater apparatus of claim 1 further comprising:

control means, connected to the heating means, for activating the heating means.

3. (Original) The heater apparatus of claim 1 wherein:

the thermally conductive mass is cast from a material in a semi-solid state.

4. (Original) The heater apparatus of claim 1 wherein:

the thermally conductive mass is formed of molded ceramic.

5. (Original) The heater apparatus of claim 1 wherein:

the thermally conductive mass is formed of an extruded material.

6. (Currently Amended) The heater apparatus of claim ~~1~~ 5 wherein:

the extruded thermally conductive mass is formed of one of a ceramic material, aluminum and poltruded carbon.

7. (Original) The heater apparatus of claim 5 wherein:

the fluid flow path is defined by a plurality of throughbores extending through first and second ends;

the heater means mounted in the thermally conductive mass concentrically within and surrounding by the plurality of throughbores; and

means for coupling a fluid inlet to one end of each of a plurality of throughbores and a fluid outlet to each of the other ends of the plurality of throughbores to define the fluid flow path as at least one parallel flow path between the inlet and the outlet through the plurality of throughbores.

8. (Currently Amended) ~~The~~ A heater apparatus ~~of claim 7 wherein the plurality of throughbores each has a helical path between opposed first and second ends~~ for heating fluid, the heater apparatus comprising:

a thermally conductive mass, the thermally conductive mass formed of an extruded, low porosity material;

heating means, thermally coupled to the thermally conductive mass, for imparting heat to the thermally conductive mass;

a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, the fluid flow path open to the exterior of the thermally conductive mass, the fluid flow path defined by a plurality of throughbores extending through first and second ends, the plurality of throughbores each having a helical path between opposed first and second ends;

the heater means mounted in the thermally conductive mass concentrically within and surrounding by the plurality of throughbores; and

means for coupling a fluid inlet to one end of each of a plurality of throughbores and a fluid outlet to each of the other ends of the plurality of throughbores to define the fluid flow path as at least one parallel flow path between the inlet and the outlet through the plurality of throughbores.

9. (Currently Amended) ~~The~~ A heater apparatus ~~of claim 7 wherein the thermally conductive mass is formed of a plurality of lamina, each lamina carrying an aperture defining a portion of the throughbores and an aperture defining a position of a bore for receiving the heater means therethrough~~ for heating fluid, the heater apparatus comprising:

a thermally conductive mass, the thermally conductive mass formed of an extruded, low porosity material;

heating means, thermally coupled to the thermally conductive mass, for imparting heat to the thermally conductive mass;

a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, the fluid flow path open to the exterior of the thermally conductive mass, the fluid flow path defined by a plurality of throughbores extending through first and second ends, the thermally conductive mass formed of a plurality of lamina, each lamina carrying an aperture defining a portion of the throughbores and an aperture defining a position of a bore for receiving the heater means therethrough;

the heater means mounted in the thermally conductive mass concentrically within and surrounding by the plurality of throughbores; and

means for coupling a fluid inlet to one end of each of a plurality of throughbores and a fluid outlet to each of the other ends of the plurality of throughbores to define the fluid flow path as at least one parallel flow path between the inlet and the outlet through the plurality of throughbores.

10. (Original) The heater apparatus of claim 9 further comprising:

certain lamina rotatably offset from adjacent lamina by an offset distance to create a stepwise helical advance in the throughbore through the stack of lamina between the first and second ends of the stack.

11. (Original) The heater apparatus of claim 7 wherein the throughbores define parallel flow paths through the thermally conductive mass.

12. (Original) The heater apparatus of claim 7 wherein the heater means comprises:

at least one heater element.

13. (Original) The heater apparatus of claim 7 wherein the heater means comprises a plurality of heater elements.

14. (Original) The heater apparatus of claim 7 further comprising:

a plurality of bores formed in the thermally conductive mass, concentrically within the throughbores, the bores adapted for receiving the heater means.

15. (Currently Amended) The heater apparatus of claim 1 wherein the heater apparatus is ~~use~~ used in a vehicle surface wash apparatus comprising:

a fluid source for supplying wash fluid;

a fluid discharge device fluidically coupled to the fluid source for discharging fluid pumped from the reservoir;

the heater means disposed in fluid flow communication between the fluid source and the fluid discharge device; and

a controller, coupled to the heater means, for supplying power to the heater.

16. (Original) The heater apparatus of claim 1 wherein the fluid flow path comprises:

a first flow path portion extending across one surface of the thermally conductive mass; and

a second flow path portion extending across an opposed surface of the thermally conductive mass, the first and second flow path portions disposed in fluid flow communication.

17. (Original) The heater apparatus of claim 16 wherein the first and second flow path portions are disposed in fluid flow communication substantially at the center of the thermally conductive mass.

18. (Original) The heater apparatus of claim 1 wherein the heating means comprises:

at least one heater element mounted in the mass.

19. (Original) The heater apparatus of claim 1 wherein the heating means comprises:

a plurality of heater elements mounted in the mass.

20. (Original) The heater apparatus of claim 1 wherein:

the heating means is disposed in the thermally conductive mass and substantially encompassed by the fluid flow path.

21. (Original) The heater apparatus of claim 1 further comprising:

a housing carrying the thermally conductive mass in an interior cavity.

22. (Original) The heater apparatus of claim 21 further comprises:

a closure fixed to the mass for closing the fluid flow channels in the mass; and

seal means, mounted over a portion of the fluid flow path in the thermally conductive mass to fluidically seal the thermally conductive mass to the housing.

23. (Original) The heater apparatus of claim 21 wherein the fluid flow path comprises:

a first flow path portion extending across one surface of the thermally conductive mass; and

a second flow path portion extending across an opposed surface of the thermally conductive mass, the first and second flow path portions disposed in fluid flow communication.

24. (Original) The heater apparatus of claim 23 wherein the first and second flow path portions are disposed in fluid flow communication substantially at the center of the thermally conductive mass.

25. (Original) The heater apparatus of claim 21 wherein the heating means comprises:

a plurality of heater elements mounted in the mass.

26. (Original) The heater apparatus of claim 22 wherein the seal means comprises:

an O-ring disposed between the peripheral portions of the closure and the thermally conductive mass.

27. (Original) A vehicle window wash apparatus comprises:

a fluid source for supplying wash fluid;

a fluid discharge device fluidically coupled to the fluid source for discharging fluid from the reservoir;

a heater means disposed in fluid flow communication between the fluid source and the fluid discharge device;

a controller, coupled to the heater means for supplying power to the heater means;

the heater means including:

a low porosity thermally conductive mass having an inlet and an outlet; and

a fluid flow path formed in the mass between the inlet and the outlet, the fluid flow path coupled in heat transfer relation to the heater means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, the fluid flow path open to the exterior of the thermally conductive mass.

28. (Withdrawn) A method for manufacturing a fluid heater comprising the steps of:

providing a thermally conductive mass with a low porosity, the mass having at least one fluid flow channel extending therethrough, the fluid flow channel having first and second ends;

mounting heater means in the thermally conductive mass, the heater means supplying heat, when activated, to the thermally conductive mass; and

fluidically coupling a fluid inlet to one end of the fluid flow channel and a fluid

outlet to the other end of the fluid flow channel to define a fluid flow path between the inlet and the outlet wherein fluid in the fluid flow path absorbs heat from the thermally conductive mass.

29. (Withdrawn) The method of claim 28 wherein the step of providing the thermally conductive mass further comprises the step of:

forming the thermally conductive mass of one of aluminum, ceramic and poltruded carbon.

30. (Withdrawn) The method of claim 28 wherein the step of providing the thermally conductive mass further comprises the step of:

forming the thermally conductive mass by one of molding and casting.

31. (Withdrawn) The method of claim 28 wherein the step of providing the thermally conductive mass further comprises the step of:

forming the thermally conductive mass of a material cast at a semi-solid material temperature.

32. (Withdrawn) The method of claim 28 wherein the step of providing the thermally conductive mass further comprises the step of:

extruding the thermally conductive mass from a low porosity material.

33. (Withdrawn) The method of claim 32 wherein the step of providing the thermally conductive mass further comprises the step of:

forming the thermally conductive mass of one of aluminum, ceramic and poltruded carbon.

34. (Withdrawn) The method of claim 33 wherein the step of providing the thermally conductive mass further comprises the step of:

extruding the thermally conductive mass as a one piece, monolithic body.

35. (Withdrawn) The method of claim 34 further comprising the step of:

forming the fluid flow channel as at least one throughbore extending between first and second ends in the body.

36. (Withdrawn) The method of claim 35 further comprising the step of:

forming the at least one throughbore in a helical path between the first and second ends.

37. (Withdrawn) The method of claim 33 wherein the step of providing the thermally conductive mass further comprises the step of:

forming the thermally conductive mass of a plurality of lamina, each lamina carrying an aperture defining a portion of the throughbore; and

another aperture defining a portion of a bore for receiving a heater means.

38. (Withdrawn) The method of claim 34 further comprising the steps of:

providing the thermally conductive mass having a plurality of throughbores extending through first and second ends;

mounting the heater means in the thermally conducive mass concentrically within and surrounded by the plurality of throughbores, the heater means supplying heat, when activated, to the thermally conductive mass; and

fluidically coupling one fluid inlet to one end of each of the plurality of throughbores and one fluid outlet to each of the other ends of the throughbores to define at least one parallel flow path between the inlets and the outlets through the plurality of throughbores wherein fluid in the through bores absorbs heat from the thermally conductive mass.

39. (Withdrawn) The method of claim 38 further comprising the step of:

forming each of the throughbores in a helical path between opposed ends.

40. (Withdrawn) The method of claim 32 further comprising the step of:

forming the thermally conductive mass of a plurality of lamina, each lamina carrying an aperture defining a portion of the throughbores, and another aperture defining a portion of a bore for receiving the heater means.

41. (New) The heater apparatus of claim 1 wherein:

the thermally conductive mass is one of a thermally conductive mass cast material cast in a semi-solid state, formed from a molded ceramic, and formed of an extruded material.

42. (New) The vehicle window wash apparatus of claim 27 wherein:

the thermally conductive mass is one of a thermally conductive mass cast material cast in a semi-solid state, formed from a molded ceramic, and formed of an extruded material.

43. (New) The heater apparatus of claim 27 wherein:

the thermally conductive mass is cast from a material in a semi-solid state.

44. (New) The heater apparatus of claim 27 wherein:

the thermally conductive mass is formed of molded ceramic.

45. (New) The heater apparatus of claim 27 wherein:

the thermally conductive mass is formed of an extruded material.

46. (New) The heater apparatus of claim 27 wherein:

the extruded thermally conductive mass is formed of one of a ceramic material and poltruded carbon.

47. (New) The vehicle window wash apparatus of claim 1 wherein:

the extruded thermally conductive mass is formed of one of a ceramic material and poltruded carbon.